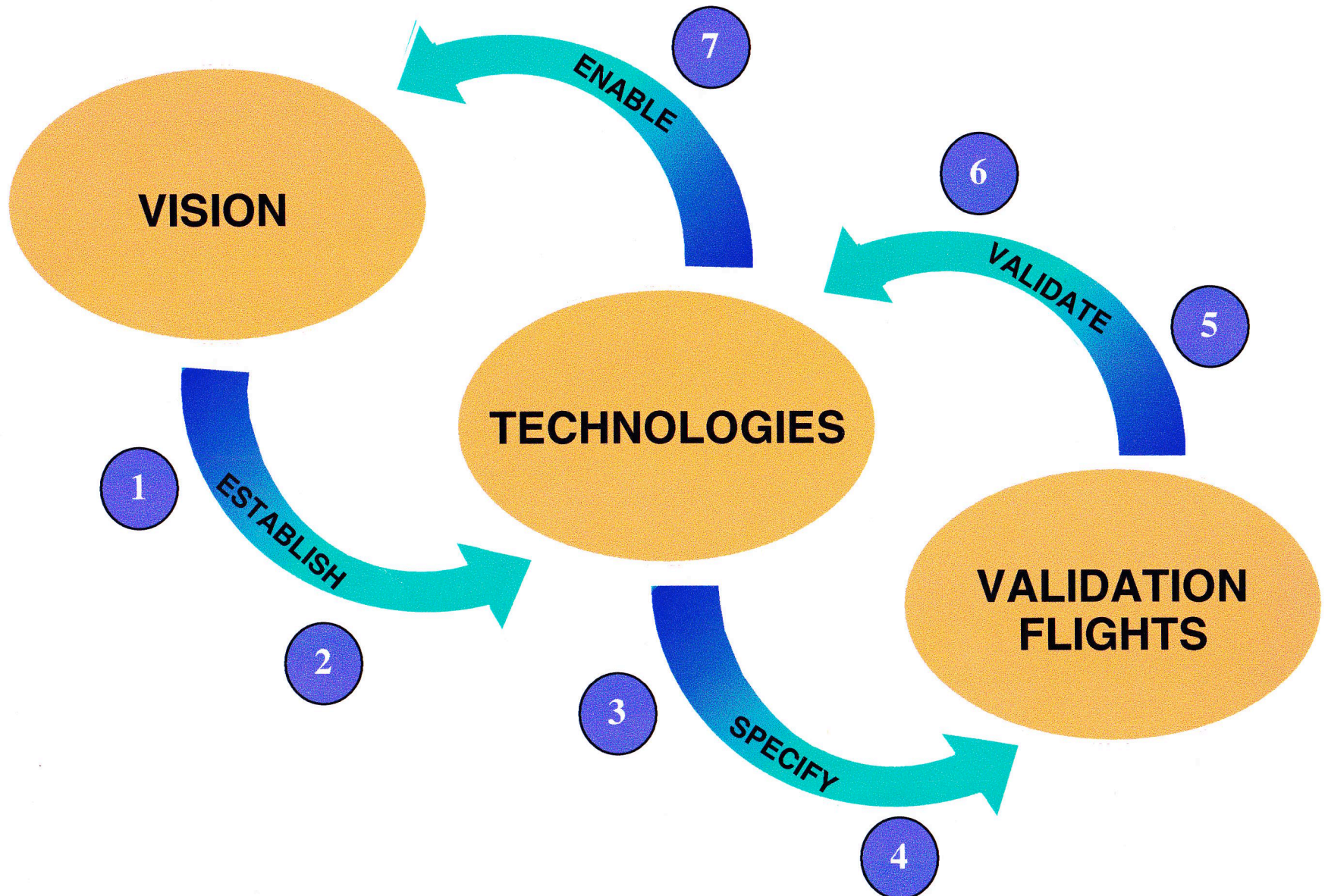
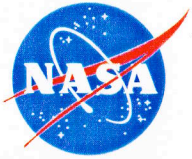


# NMP Program Process



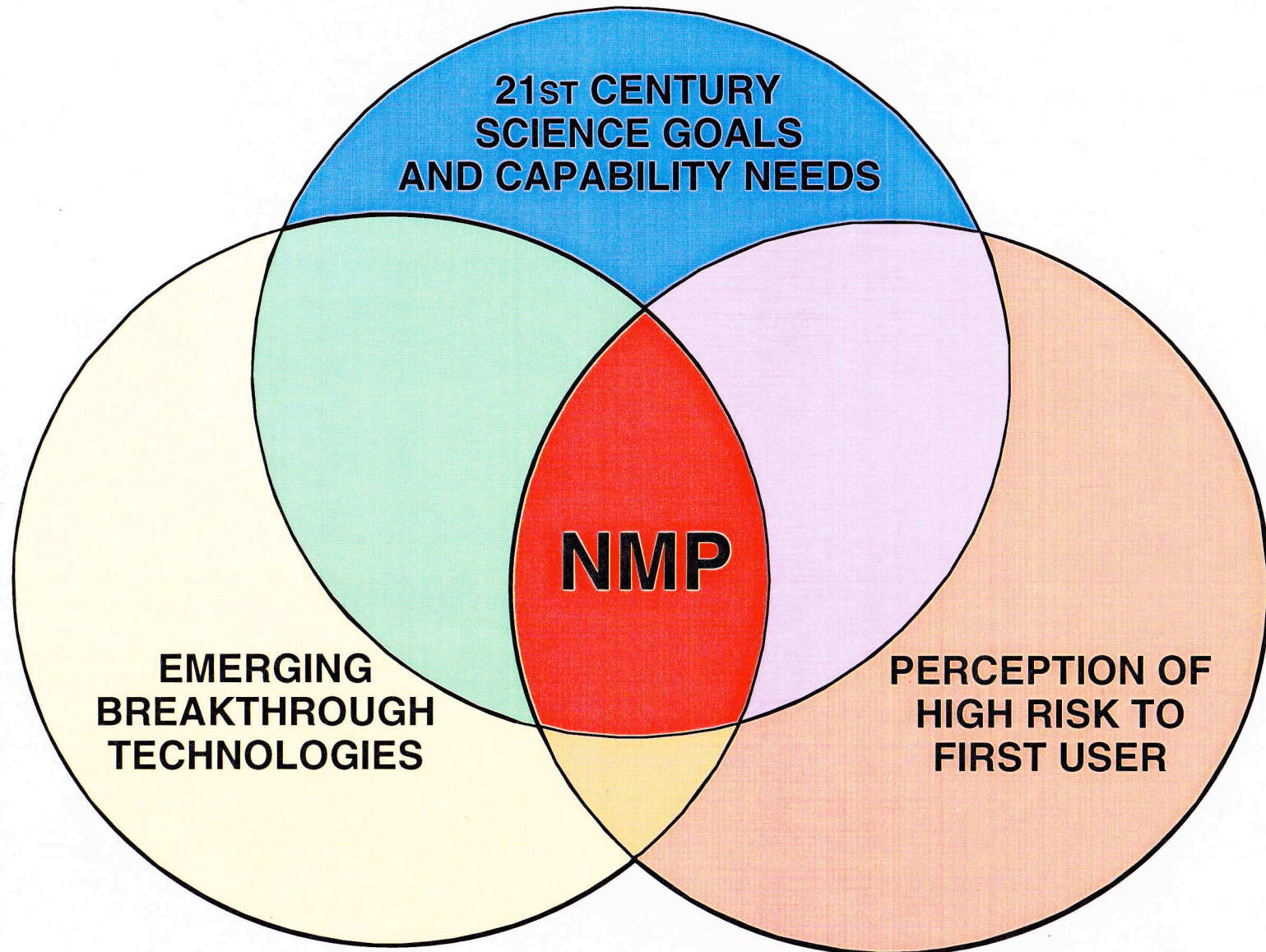




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## PROGRAM FOCUS

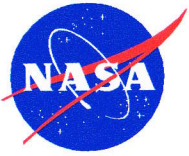




# Comparison: Science Missions vs. Technology Flight

	Science Missions	Technology Validation Flight
Primary Purpose	Achieve Science Goals	Validate key technologies
Primary Data	Science Measurements	Engineering data, including demonstration of science return
Optimization Criteria	Individual mission science	Payoff for 21st century missions
Flight System Goal	Cost effective science	Cost effective validation
New Technology Selection	Optimize individual missions	Reduce cost of future missions



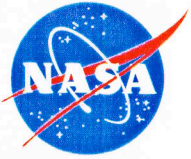


# NMP Team Selection Processes



- **Science Working Group**
  - Appointed by JPL management with NASA HQ concurrence
- **Validation Flight Science Team**
  - Competitively selection via AO/NRA by NASA HQ
- **Integrated Product Development Team**
  - Competitively selected via RFP
  - Industry/academia/government labs
  - Refreshed periodically
- **Architecture Development Team**
  - JPL/GSFC
- **Validation Flight Team**
  - IPDT members deliver selected technologies
  - Competitive procurement for spacecraft partner





## SWG ROLE

- DEFINE SCIENCE CAPABILITIES NEEDED FOR 21ST CENTURY EARTH OBSERVATION AND SPACE EXPLORATION
- REVIEW TECHNOLOGY ROADMAPS AND PROVIDE SCIENCE GUIDANCE TO IPDTS
- DEFINE HIGH PRIORITY VALIDATION MISSION THEMES
- REVIEW CANDIDATE VALIDATION MISSIONS
- SERVE ON VALIDATION MISSION SCIENCE ADVISORY TEAMS AS NEEDED

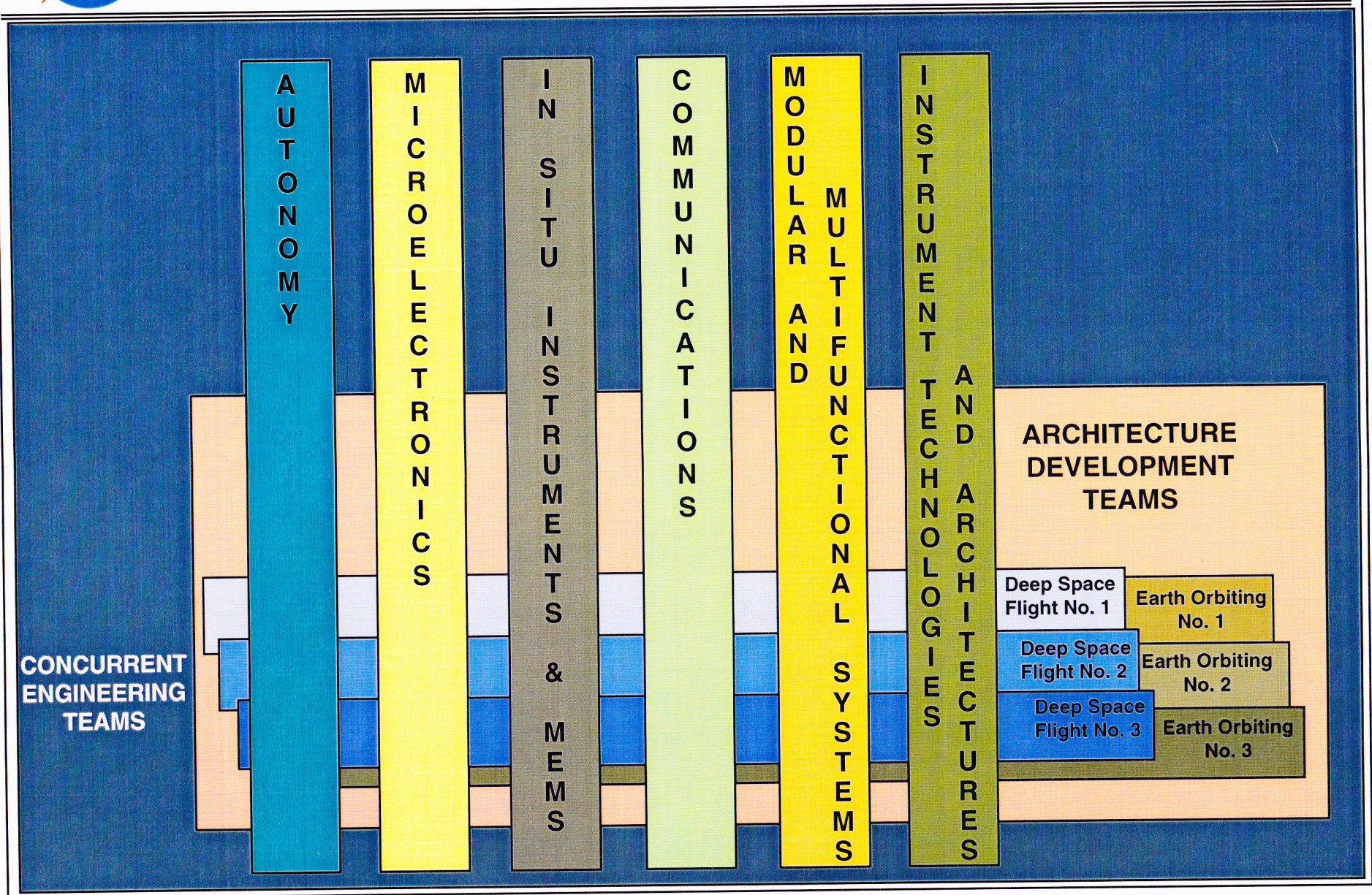




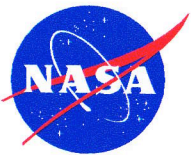
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# Integrated Product Development Teams

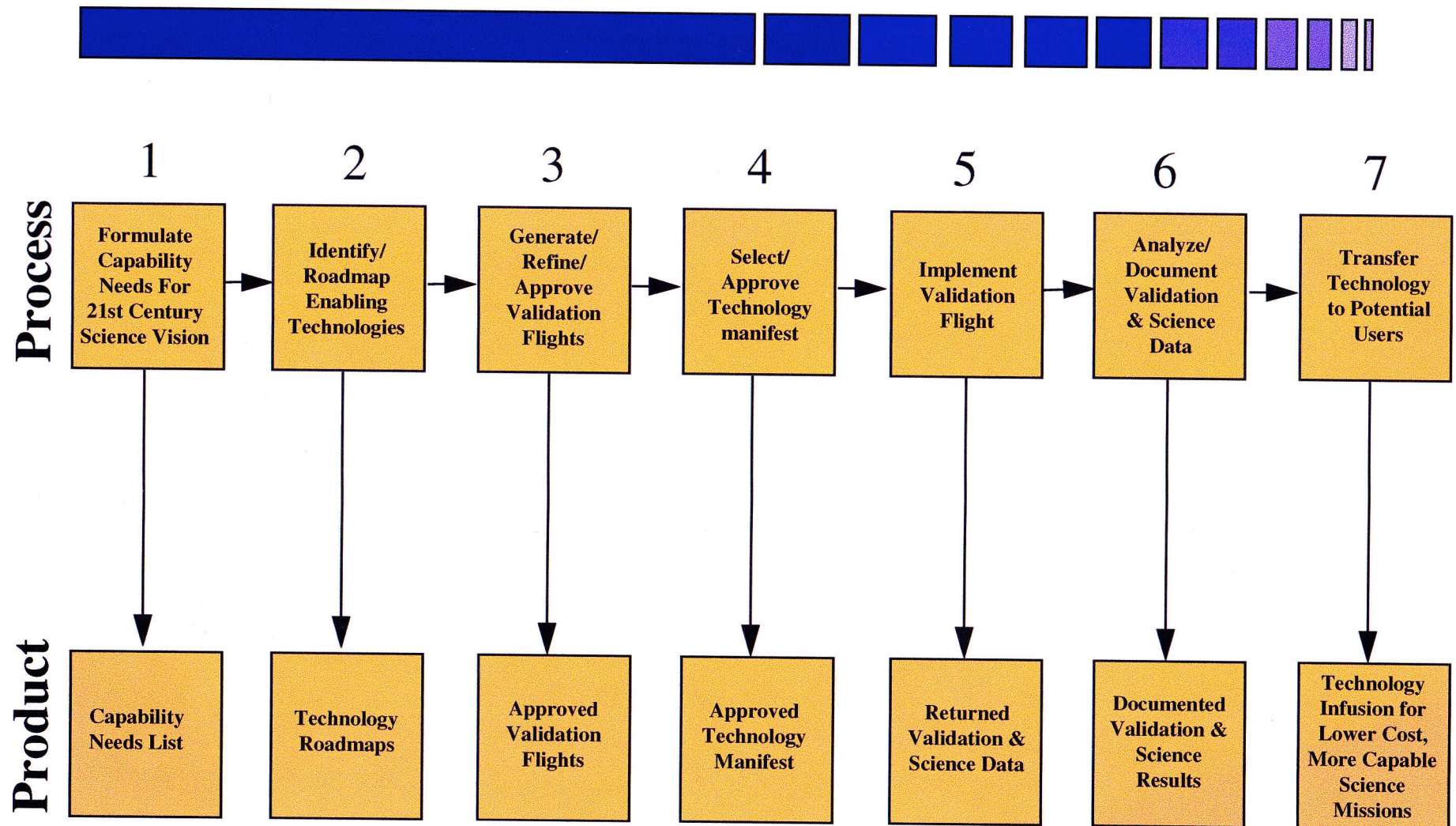
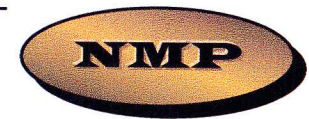




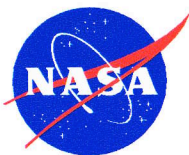


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# NMP Processes and Products



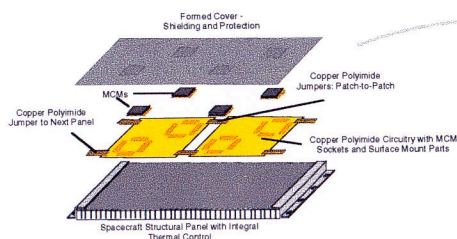




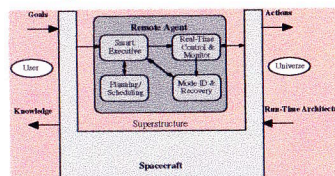
# ASTEROID AND COMET FLYBY

## DEEP SPACE ONE VALIDATION TECHNOLOGIES

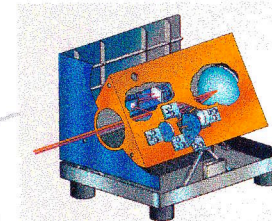
### Multifunctional Structure



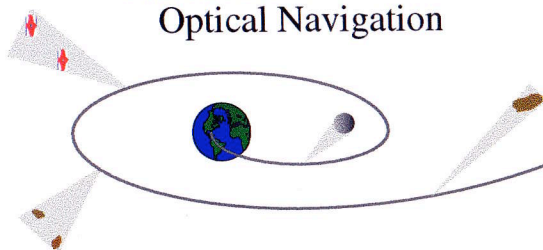
### Autonomy Remote Agent Architecture



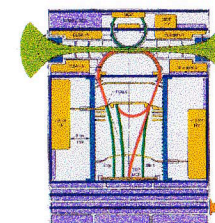
### Miniature Integrated Camera-Spectrometer



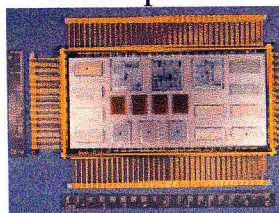
### Autonomous On-Board Optical Navigation



### Plasma Experiment for Planetary Exploration

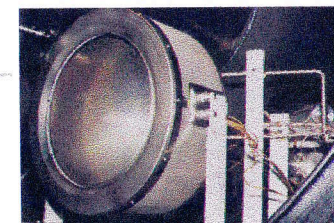


### Advanced Flight Computer



### SCARLET Advanced Solar Concentrator Array

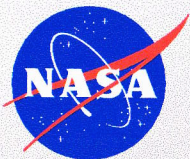
### NSTAR Ion Propulsion System



### Ka-Band Solid State Power Amplifier







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# MARS MICROPROBE

## DEEP SPACE TWO VALIDATION TECHNOLOGIES

Programmable  
Telecommunications  
System-on-a-Chip

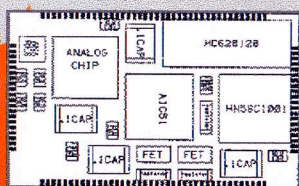


Non-Erosive  
Single Stage  
Atmospheric Entry  
System

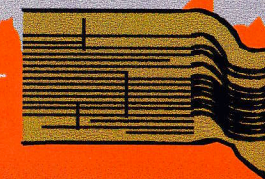
Low Temperature  
Primary Batteries



Highly Integrated  
Instrument  
Microcontroller



Flexible Interconnect  
for System Cabling



Power Microelectronics  
Mixed Analog/Digital ASICs



Subsurface Sample/Water  
Detection Instrument







## RETURN ON INVESTMENT

